Impact of Conflicts on Team Creativity in Indian Software Companies: Gains & Detriments

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In this paper, the author identifies probable reasons for conflicts among the project teams and their impacts (positive or negative) on the creativity of the team. The project also involves understanding how project teams can manage conflicts to enhance decision outcomes, creativity and project performance. It is identified through research that, in Indian software firms, two variables, viz., task conflict and relationship conflict are affecting the team performance

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Introduction

Creativity in organizations manifests itself as competitive advantage in terms of innovative strategies, novel approaches to markets and product development, differentiation, improving internal processes and identifying efficiency and productivity gains. Though creativity comes from team efforts in the organizational setting (West & Farr, 1990), creativity research mostly focused on individuals (Shalley, Zhou & Oldham, 2004; Mumford, 2003). Of late, research on the subject has turned its focus on team creativity (Gilson & Shalley, 2004; Taggar, 2002). Two studies by Shalley et al (2004) and Mumford (2003) have answered many questions, one of them being how intra-team conflict affects team creativity.

The use of work teams is becoming more and more prominent in organizations today. The performance of software development teams is an important topic in the information systems (IS) domain. But the success rate of projects is much lower than expected; the figures say that almost 18% projects fail whereas about 53% are difficult to accomplish (Liang, Lin, Lin & Liu, 2007). Teams are formed

of individuals; they go through a process of interaction to do the work. During this interaction conflicts may arise due to: (a) antecedent conditions, (b) cognition and personalization of conflict, leading to (c) behavior manifestation and then to (d) some aftermath of conflict (Applebaum, 1999).

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Conflict refers to a process of social interaction involving a struggle over claims to resources, power and status, beliefs, and other preferences and desires. Obviously the potential sources of conflict are almost infinite, and the objectives, scope, intensity, methods, number of participants, and outcomes, may also vary greatly. For this, conflict is a natural phenomenon in social relations, as natural as harmony. It is difficult to envision the attainment of positive social goals without it. Humans have been unable to understand conflict because they relate it to destructiveness, antagonism, uncomfortable relationships, violence and war. This idea about conflict has led to avoiding trying to confront a conflict in its early stages, thus leading to the escalation of the situation (Applebaum, 1999).

However, the problem is that conflict is difficult to manage because it comes in two forms – constructive and destructive. In some instances, conflict enables teams to generate higher quality decisions, and a deeper understanding and commitment to the decisions reached. In other instances, conflict gives few of these benefits, and has been shown to degrade decision making and thwart the attainment of project goals.

Objectives

The present study focuses on the influence of intra-group conflict (because of uncertainty and ambiguity) and its effects on creativity. Some perspectives on conflict suggest that it is beneficial to foster creativity amongst teams (Jehn, 1995; Jehn & Mannix, 2001), while other perspectives suggest that it may have considerable negative effects (Carnevale & Probst, 1998; DeDreu & Weingart, 2003).

To understand the above effects, the author bases the present study on Gilson and Shalley (2004) who suggested that team processes are crucial mechanisms in determining creativity outcomes. Till date, what generates creative outcomes and what are the key team processes involved in generating the said outcomes, remains largely unanswered. In this paper, an attempt is made to understand and resolve inconsistent theoretical predictions about the effects of intra-team conflict on team creativity outcomes. This is done by exploring the effects of both task and relationship conflict on two team creative-process related variables (the extent of information exchange; and the engagement in team creative problem solving), and ultimately on team creative outcomes, thus linking inputs, process and outputs in one model.

Literature Review

Conflicts commonly arise when employees interact in organizations and compete for scarce resources. The individuals working on project teams (service driven or technology driven) experience two types of conflicts: task conflict and interpersonal conflict (Liang, Lin, Lin & Liu, 2007).

- Task conflict involves disagreements about the task itself - debate about the merits of the ideas, plans and types of project to do.
- Relationship conflict reflects anger, tension, friction and personality clashes among team members.

Conflict has been suggested to interfere with team performance and reduce satisfaction because it produces tension, hostility and distracts team members from performing the task. Deutsch (1973), Coser (1956) and Walton (1969) recognized that low levels of conflict could be beneficial. When in conflict, people confront issues, learn to take different perspectives, and need to be creative. When conflict is absent, teams might not realize that inefficiencies exist. Indeed teams make better decisions in the presence of low levels of conflict. The positive effects of conflict are: stimulating involvement in the discussion, improving the quality of decisions and building group cohesion. Task conflict positively affects team performance whereas relationship conflict negatively affects performance (Liang, et al, 2007; Caetano & Passos, 2005). The relationship conflict has a positive influence on the desire to leave the current job, while task conflict does not affect it negatively (Francisco J. Medina, Lourdes Munduate & Miguel A. Dorado, 2005). Many studies have shown that task conflict has a positive effect on team creativity under certain conditions. De Dreu (2006) said that task conflict had a curvilinear effect on innovation and the innovation was optimal at moderate levels of task conflict. Farh (2010) gave a similar conclusion in his study, and found that the team phase also moderated the relationship with the strongest effect at an early phase. Langfred and Moye (2014) found that, replicated across multiple periods of time, task conflict does not have an effect on either information exchange or creative problem solving, but relationship conflict does. Furthermore, while relationship conflict undermines intra-group creative processes, only task conflict appears to affect the creativity of the group's final outcomes.

Task conflict positively affects team performance whereas relationship conflict negatively affects performance.

Team creativity has three components: creativity, productivity and innovativeness. Creativity is generally studied at three levels namely, individual, team and organizational. It is very complex in project teams, as it involves a combination and integration of various inputs and knowledge from multiple and independent project team members (Chen, 2006). Conflict inevitably arises in project teams in one form or another

and in varying degrees due to the mere group or team dynamics of having people with different backgrounds, ideas, and potential agendas coming together in an effort to accomplish a common goal.

Conflict is generally perceived to be negative and something which has to be avoided. However, conflict isn't always negative and there are situations in which positive conflict is necessary in order to prevent compliance tendencies and disastrous effects of groupthink (Baron, 1991).

Factors Leading to Conflict

The main conditions which could initiate conflict situations in an organization are as follows (A. Moye, Lucy L. Gilson & Claus W. Langfred, 2005): difficulties in communicating can cause misunderstanding, which can then create conflict situations (communication barriers), role and responsibility interdependencies between individuals as well as lack of clarity in the same (ambiguous jurisdiction), accomplishing mutually conflicting goals with obstructions in achieving the same (goal incompatibility and conflict of interest), dependency, disagreement between individuals of different specializations, unresolved prior conflicts, and different perceptions about rules and regulations causing conflict.

There is literature about C-type conflict (Esquivel & Kleiner, 1996) which allows members to contribute openly and honestly to the team's decision-making process while maintaining acceptance by team members and creating greater commitment. While C-type conflict fosters creativity, open and honest communication and the utilization of members' skills and abilities, A-type conflict does just the opposite. A-type conflict decreases the effectiveness of the group by allowing personal feelings or someone's own agenda to deter the members from the team's objective. Creativity is limited by the members' reduced ability to contribute input owing to the increasing hostility, anger and the elimination of trust. Team members' input may be shut down, which creates a loss of commitment to the team's decision-making process. A-type conflict also has a future effect on team members. Team members may not choose to interact at a later time because of the personalized nature of the conflict.

Creativity in project teams plays a bridging role for linking individual creativity and organizational creativity. Project teams were often applied by organizations in order to generate creative ideas, and transfer these newly created ideas into useful technology, products, or services (Chen, 2006). Although the mix of appropriate capabilities within the team is quite important, it is unlikely that project team members all have relevant expertise, knowledge and information necessary to design the project.

The process of networking encompasses social interaction, trusting relations, and value systems that facilitate the actions of project team members in order to access knowledge and resources, and exchange information, which can lead to more creative output of the project teams (Chen, 2006). Also project teamwork creates more opportunities for team

members to participate in problem-solving and decision making, and offers a range of different skills, abilities, knowledge, and experience to ensure that creative ideas are supported. Team creativity is defined as an aggregated concept of creativity, productivity, and innovativeness. Team creativity can generate more creative ideas, but can involve more conflict in the communication and discussion processes.

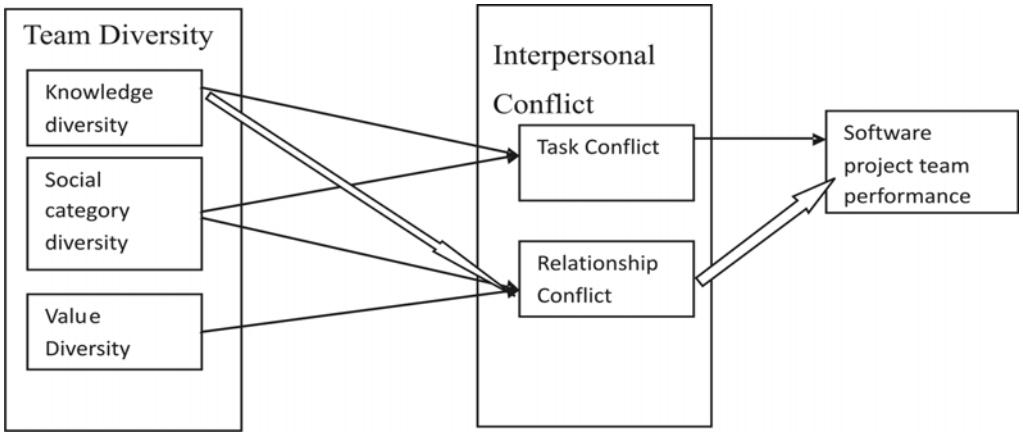
When participants anticipated a competitive and a hostile negotiation, creative thinking decreases. When interpersonal conflict becomes more intense and arousal increases, cognitive load increases, information processing is impeded, which interferes with cognitive flexibility and creative thinking.

The traditional perspective views conflict as a malfunction within the group while the human relations perspective views conflict as a natural occurrence, which may be reinforcing the status quo and might even enhance performance in certain circumstances (Chen, 2006). The interactionist perspective encourages both conflict stimulation and conflict resolution.

When we look at performance of the team we mean efficiency of its process, group effectiveness and also timely completion of tasks. Knowledge diversity, value differences and social background differences can lead to task or relationship conflicts (Liang et al, 2007). These differences may arise because of different education, experience, and expertise among team members.

Research on conflict pointed out that whether conflict was beneficial or detrimental depended on the type and level of conflict and the nature of team task (Chen, 2006). Further research is required to identify the factors underlying the relationship between team diversity and software team performance (Liang, Lin, Lin & Liu, 2007). The research model given by Liang et al is presented in Fig. 1.

Fig. 1 Research Model



Source: Liang, Lin, Lin & Liu (2007)

Given the above literature, it is however felt that a study is needed in the Indian context as most of the IT services are being outsourced to India and it has become the world's IT hub. So, the creativity and performance of these companies is important and since IT companies have team work structure it becomes essential to understand and curb the conflicts which arise.

Methodology

In order to collect the generalized data from the professionals in the industry, a questionnaire survey was considered suitable for establishing the component elements of research variables. Samples were randomly selected from membership records of various professional institutions in India with direct experience in the project management processes involving the client, project manager and other project team members, and they must have experience in a (perceived) successful project. A total of 183 questionnaires were fully completed and returned finally. The questionnaire was sent in two parts to see the task conflict and relationship conflict impacts. The points were distributed on five a point Likert Scale ranging from -2 to 2. Methodology adopted for the study is descriptive and analytical.

Analysis & Findings

Most of the respondents (60%) are of the age group of 18-30 years, while 23.3% respondents belong to 31-45 years age group and only 6.7% of them come under the age group of <18 years. Percentage of respondents above the age of 45 years is 30%. 63.3% of the respondents, included in the survey, are males and only 36.67% (i.e. 11 out of 30) are females.

As presented in Table 1, 40% respondents are post graduates and 53.3% are graduates. The percentage of respondents who have not completed their graduation and who come under the under graduate group is 6.7%. 46.7% respondents have worked on projects of 6 months to 1 year duration and 30% of them have worked on 1 month to 6 months duration projects. Only one respondent has worked on a project of duration less than one month and greater than 2 years each.

The respondents have given a somewhat positive impact of the task conflict to 19 statements out of 25 statements asked for measuring the impact of task conflicts on the creativity and performance of the project teams, which is evident from the mean scores achieved. The impact of relationship conflict is somewhat negative on 14 out of 25 statements used to measure the impact of relationship conflicts on project teams' creativity and performance.

Table 1 shows that the correlation between age and impact of task con-

There is a positive and statistically significant correlation between age and impact of task conflicts on creativity and performance of project teams.

flicts is statistically significant with a significant level of 0.001. There is a positive and statistically significant correlation between age and impact of task conflicts on creativity and performance of project teams. Correlation between duration of project and the impact of task conflicts is statistically significant at the significance level of 0.01 whereas educational qualification is significantly correlated with the impact of task conflicts at the significance level of 0.05. The correlation of impact of task conflicts with other demographic variable i.e. gender is not statistically significant.

Table1 Correlations between Impact of Task Conflict and Demographic Variable

Correlations

		Age	Gender	Educational Qualification	Duration of project	Overall Impact of Task Conflict
Age	Pearson Correlation	1	-.279	.619**	.758**	.596**
	Sig. (2-tailed)		.135	.000	.000	.001
	Sum of Squares and Cross-products	16.967	-3.033	8.333	14.467	11.200
	Covariance	.585	-.105	.287	.499	.386
	N	30	30	30	30	30
Gender	Pearson Correlation	-.279	1	-.077	-.289	-.233
	Sig. (2-tailed)	.135		.685	.121	.216
	Sum of Squares and Cross-products	-3.033	6.967	-.667	-3.533	-2.800
	Covariance	-.105	.240	-.023	-.122	-.097
	N	30	30	30	30	30
Educational Qualification	Pearson Correlation	.619**	-.077	1	.551**	.403*
	Sig. (2-tailed)	.000	.685		.002	.027
	Sum of Squares and Cross-products	8.333	-.667	10.667	8.333	6.000
	Covariance	.287	-.023	.368	.287	.207
	N	30	30	30	30	30
Duration of project	Pearson Correlation	.758**	-.289	.551**	1	.483**
	Sig. (2-tailed)	.000	.121	.002		.007
	Sum of Squares and Cross-products	14.467	-3.533	8.333	21.467	10.200
	Covariance	.499	-.122	.287	.740	.352
	N	30	30	30	30	30
Overall Impact of Task Conflict	Pearson Correlation	.596**	-.233	.403*	.483**	1
	Sig. (2-tailed)	.001	.216	.027	.007	
	Sum of Squares and Cross-products	11.200	-2.800	6.000	10.200	20.800
	Covariance	.386	-.097	.207	.352	.717
	N	30	30	30	30	30

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

There is a negative yet statistically significant correlation between age and impact of relationship conflicts on creativity and performance of project teams.

The relation between demographic variables and impact of relationship conflicts on team creativity and performance was examined by using the correlation analysis. Table 1 shows that the correlation between age and impact of relationship conflicts is statistically significant with sig. level of 0.001**.** There is a negative yet statistically significant correlation between age and impact of relationship conflicts on creativity and performance of project teams. Correlation between duration of project and the impact of relationship conflicts is negative and statistically significant at significance level of 0.01. Educational qualification is also significantly correlated with the impact of relationship conflicts with the significance level of 0.008. The correlation of impact of relationship conflicts with other demographic variable gender is not statistically significant.

Conclusion

In conclusion, this paper contributes to team composition by increasing the theoretical and empirical understanding of how team diversity affects its performance and creativity. For instance, Rock, Grant & Grey (2016) in HBR wrote that diverse teams feel less comfortable and that is why they work better. The idea behind this is what psychologists call, "the fluency heuristic". A 2015 study substantiated this through an experiment wherein MBA students were asked to imagine co-managing groups of 4 interns each with 4 white men and 4 black men in each group and a mix of members in one group and all are exposed to same work environment. The mixed group asked for additional resources. The study showed that relationship conflict existed in homogenous group while more relationship conflict existed in diverse group. The perception of conflict made the participants to respond less favorably to the additional resources requested by the mixed group. This type of unconscious bias has an impact on how leaders create teams and encourage collaboration. Unknowingly, managers/leaders may be disinclined to add diversity to a team or to allocate colleagues with different backgrounds to work together, for fear of tension and any difficulty that could follow. Intuitively, in a homogenous team, people understand each other readily and collaboration is smoother, giving a feeling of progress. Dealing with outsiders causes friction, which becomes counterproductive. To substantiate, in a homogenous group which fails to arrive at a correct solution, an addition of a new outsider or insider might increase the probability of arriving at a correct solution. The work might be harder but outcomes would be better. This does not mean that teams need to be more diverse in order to perform well, but creation of an environment where diversity can gel well is important. The above finding may be relevant to races but in India, race may be replaced by caste, region, language and religious diversity.

The author presented here the detriments and gains of team based work environment so that a team can be managed optimally and efficiently. The result of this study provides direction for creating and managing diverse teams to enhance team performance. Project leaders can enhance team performance by leveraging the knowledge differences of members and by managing inter-group conflicts carefully if the team members have very different values (Liang et al, 2007). Our study helps promote effective management of diversity and conflicts in work groups and delineates the critical importance of these two factors for project success. The study also shows that both conflict and conflict resolution in the goal setting process are essential components influencing the final outcome (satisfaction) and that solving conflict using the integration style would mean arriving at the best value (goal) in the decision process as well as improving the level of participant satisfaction (Leung, Liu & Ng, 2005).

While conflict exists in team interaction, the key to an effective work team is to manage conflict as given by Esquivel & Kleiner (1996): Disseminate a full agenda early, state the philosophy for the team and back up that philosophy, provide the right environment for the meeting, have behavioral strategies to run the meeting in mind before the meeting begins, keep a sense of where the discussions are going, channel discussion from A-type conflict towards C-type conflict, support the team, and be proactive and reactive, not passive.

Managerial Implications

The practitioners can also benefit from this study. First, the managers can use the given framework to assemble their team. Second, the conflict based impact explained through the model can help the manager understand the dynamics of the team as well as to manage a diverse team. Diverse backgrounds imply people from different backgrounds in terms of knowledge, society and values which will influence the performance of the team. Knowledge diversity is measured through education and experience, it provides flexibility in the team to match skills and tasks, and it helps in improving quality of decision making. Thirdly, we know that value diversity (VD) increases relationship conflict. So the manager should ensure that this does not happen. It could be from differences such as being flexible or open ended whereas some are cautious and not participative. A manager should ensure that he minimizes VD in his team. Finally, a manager needs to address and resolve the conflict among team members during work; he needs to differentiate between constructive conflict i.e. cognitive conflict and relationship conflict (Liang et al, 2007). Cognitive conflict gives rise to debate differing task-related opinion such as team goals, key decision areas, procedures, and appropriate choices of action. Such

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exchanges help team members better understand issues surrounding the decision context and synthesize multiple perspectives to derive solutions that are superior to those made by any individual team member.

Some authors have found that cognitive conflict improves decision quality, consensus among team members, and commitment to decisions. Overall, relationship conflict may lead to negative emotions, such as anger and frustration directed at other team members, and thus it should be minimized for better team cohesiveness.

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